

Amendments to the Specification:

Please replace paragraphs 0008, 0015, 0043, 0054, 0056, 0063 and 0064 with the following amended paragraphs:

[0008] Many of the above shortcomings are addressed by various currently pending patent applications assigned to the assignee of the present application, such as U.S. Patent Application Serial Nos.: 10/306622 (Attorney Docket No. 021629-000110US), filed November 27, 2002; 10/306620 (Attorney Docket No. 021629-000210US), filed November 27, 2002; 10/306813 (Attorney Docket No. 021629-000320US), filed November 27, 2002; 10/412714 (Attorney Docket No. 021629-000330US), filed April 10, 2003; 10/637713 (Attorney Docket No. 021629-000340US), filed August 8, 2003; 10/624451 (Attorney Docket No. 021629-000400US), filed July 21, 2003; 10/738666 (Attorney Docket No. 021629-000510US), filed December 16, 2003; 10/458062 (Attorney Docket No. 021629-001800US), filed June 9, 2003; 10/686507 (Attorney Docket No. 021629-001900US), filed October 14, 2003; 10/686025 (Attorney Docket No. 021629-002000US), filed October 14, 2003; 10/687532 (Attorney Docket No. 021629-002100US), filed October 15, 2003; 10/46466 (Attorney Docket No. 021629-002200US), filed December 23, 2003; and ~~10/~~ 10/794405 (Attorney Docket No. 021629-002400US), filed March 3, 2004, all of which are hereby incorporated fully by reference. Although many improvements in stent design and stent delivery techniques have been suggested, improvements are still being sought.

[0015] Optionally, some embodiments further include dilating at least one lesion in the vessel using an expandable member on the delivery catheter before deploying at least one of the first and second stents. Such dilating of a vessel before deploying a stent is often referred to as "pre-dilatation." In various embodiments, various different techniques for pre-dilatation and stent placement may be employed. For example, in one embodiment an expandable member may be used to pre-dilate a vessel, and then the same expandable member may be used to deploy ~~and an~~

expandable stent. Sometimes, the same expandable member may additionally be used to further expand the stent after it has been deployed. In another embodiment, an expandable member may be used to pre-dilate a vessel and then self-expanding stent(s) may be deployed from the delivery catheter without using the expandable member for deployment. In another embodiment, a first expandable member may be used for pre-dilatation and a second expandable member on the same delivery catheter may be used to deploy stent(s) in the vessel. Thus, any suitable combination of expandable members, pre-dilatation and stent delivery are contemplated within the scope of the invention. Stent delivery devices and methods involving pre-dilatation are described more fully in U.S. Patent Application Serial No. ~~10/~~_____ 10/794405 (Attorney Docket No. 021629-002400US), entitled "Stent Delivery Apparatus and Methods," filed March 3, 2004, which was previously incorporated by reference.

[0043] Further description of stent delivery catheter devices such as those illustrated by Figs. 1, 2A and 2B may be found in U.S. Patent Application No. 10/46466, which was previously incorporated by reference. Further detailed description of the distal portion of a stent delivery catheter may be found in U.S. Patent Application Serial No. ~~10/~~_____ 10/794405 (Attorney Docket No. 021629-002400US), which was previously incorporated by reference.

[0054] Referring now to Figs. 6A-6H, one embodiment of a method for treating lesions in a ~~bifurcated~~ bifurcation using a stent delivery catheter of the invention will be described. While the invention will be described in the context of coronary artery treatment, the invention is useful in any of a variety of bifurcated blood vessels and other body lumens in which stents are deployed, including the carotid, femoral, iliac and other arteries, as well as veins and other fluid-carrying vessels. A guiding catheter (not shown) is first inserted into a peripheral artery such as the femoral and advanced to the ostium of the target coronary artery A. Referring to Fig. 6A, a guidewire 168 is then inserted through the guiding catheter into the coronary artery A where one or more lesions L are to be treated. The proximal end of guidewire 168 is then inserted through a nosecone 164 of a stent delivery catheter 160 outside the patient's body, and stent delivery

catheter 160 is slidably advanced over guidewire 168 and through the guiding catheter into the coronary artery A. During advancement, a sheath 162 is extended to nosecone 164 to surround the expandable member.

[0056] Optionally, as shown in Fig. 6B, sheath 162 may be retracted and expandable member 166 expanded to predilate lesion L prior to stent deployment. Stent delivery catheter 160 may be used for predilatation by retracting sheath 162 along with stent segments (not shown) to expose an extremity of expandable member 166 long enough to extend through the entire lesion. (Alternatively, predilatation may be performed prior to introduction of stent delivery catheter 160 by inserting a separate angioplasty catheter over guidewire 168 and dilating lesion L.) This may be done while delivery catheter 160 is positioned proximally of lesion L or with expandable member 166 extending through lesion L. In some embodiments, fluoroscopy enables the user to visualize the extent of sheath retraction relative to lesion L by observing the position of a marker on sheath 162 relative to a marker at the distal end of expandable member 166. To allow stent segments to move proximally relative to expandable member 166, force is released from pusher tube 36 and valve member 50 (Figs. 2A and 2B) engages and draws the stent segments proximally with sheath 162. With the appropriate length of expandable member 166 exposed, inflation fluid is introduced through inflation lumen 34 to inflate expandable member 166 distally of sheath 162 and thereby dilate lesion L. Expandable member 166 is then deflated and retracted within sheath 162 while maintaining force on the pusher tube so that stent segments are positioned up to the distal end of expandable member 166, surrounded by sheath 162. Alternative embodiments of devices and methods for lesion predilatation are described in detail in U.S. Patent Application No. ~~40/~~ 10/794405 (Attorney Docket No. 021629-002400US), which was previously incorporated by reference.

[0063] As shown in Figs. 7D and 7E, in one embodiment in which second stent 220 extends into the main branch MB, stent delivery catheter 200 may ~~by~~ be advanced into main branch MB again, after placement of second stent 220, and expandable member 206 may be expanded so as

to expand an opening 221 in the "elbow portion" of second stent 220 in alignment with the passage through first stent 210. Fig. 7E schematically shows first stent 210 overlapping second stent 214, the latter of which includes opening 221 in the "elbow portion" of the stent 214. [[.]] Such expansion of an opening of second stent 220 helps to prevent disruption of blood flow through the main branch MB due to the presence of second stent 220 within the main branch MB.

[0064] With reference now to Figs. 8A-8D, another embodiment of a method for treating bifurcated vessels is described. As shown in Fig. 8A, a first stent 240 is delivered via a stent ~~deliver~~ delivery catheter (shown in Fig. 8B) in a main branch MB of the vessel, such that a central portion 244 of first stent 240 is positioned at an ostium of a side branch SB. First stent 240 is generally configured as the stents described above with reference to Figs. 5A-5D, thus having central portion 244 with one or more large sidewall openings and adjacent end portions 242 having smaller (or "higher density") sidewall openings. In one embodiment, central portion 244 is self-expanding while end portions 242 are balloon expandable. Central portion 244 may be positioned relative to the side branch SB ostium using fluoroscopy or any other suitable technique. A guidewire 238 may then be extended through a sidewall opening in central portion 244, into the side branch SB and up to or past a side branch lesion L.